AMERICAN TUBE WORKS

BOSTON.

SEAMLESS DRAWN.

RUSSELL RICHARDSON & CO.

OFFICE,

STATE STREET.

American Tube Works.

OFFICES

BOSTON, - - - 97 STATE STREET.

NEW YORK, - - 78 JOHN STREET.

PHILADELPHIA, COR. 4TH & LOCUST STS.

CHICAGO, - - - 79 LAKE STREET.

AMERICAN TUBE WORKS

BOSTON

Sole Manufacturers in America of

GREEN'S AND ALSTON'S

Patent Seamless Drawn Brass Tubes,

AND

ADAMS' PATENT

Seamless Drawn Copper Tubes,

FOR

LOCOMOTIVE, MARINE AND STATIONARY

BOILERS.

Heater Tubes.	*Hand Rail.*	*Feed Pipes.*
Worms for Stills.	*Pump Chambers.*	*Sand Pipes.*
Paper Rolls.	*Steam Pipes.*	*Pump Rams.*
Bilge Pipes.	*Condensers.*	*Printers' Moulds.*

AND OTHER PURPOSES.

WM. C. COTTON, Treas.

97 STATE STREET, BOSTON.

NEW YORK OFFICE: 78 JOHN STREET,

W. H. BAILEY, Agent.

ECHO PRINT,
756 WASHINGTON STREET,
BOSTON.

LIST OF

SIZES, WEIGHTS, &C.

OF

SEAMLESS DRAWN BRASS TUBES,

AND

SEAMLESS DRAWN COPPER TUBES,

MANUFACTURED BY

AMERICAN TUBE WORKS,

97 STATE STREET,

BOSTON.

AMERICAN TUBE WORKS, BOSTON.

SEAMLESS DRAWN BRASS TUBES.

THESE Tubes were first manufactured in America in January, 1852, by the AMERICAN TUBE WORKS, Boston, and are identical with those known in England since 1848 as "Green's Patent Tubes." The works of the company were erected for the express purpose of manufacturing Seamless Tubes, and their machinery is an improved duplicate of that long and successfully in operation in England.

For Locomotive, Marine, Stationary Boiler, and Steam Fire Engine Flues, they have never been excelled for economy and durability, even considering difference in cost of metals.

CONDENSER TUBES.

For this purpose they are drawn, after being tinned inside and outside, which hardens the coating of Tin and adds much to its durability.

COVERED IRON TUBES.

We draw our Seamless Brass Tubes over Iron Tubes, for purposes where great stiffness is required: such as Hand Rail, Cemetery Rails, Pump Rods, &c., saving cost in thickness of brass.

BRASS LINED IRON TUBES.

These Tubes are extensively used for Pumps, especially Oil Well Pumps, Chambers, &c.

TAPER TUBES.

Our Patent Taper Tubes, for Hose Pipe and other purposes, are made of any dimensions desired, in quantity.

TUBES TO ORDER.

For Gas or ornamental purposes made square, triangular, octagonal, rectangular, oval, flat, or irregular.

AMERICAN TUBE WORKS, BOSTON.

SEAMLESS DRAWN COPPER TUBES.

AFTER long and repeated trials at our works, we succeeded in producing Seamless Copper Tubes identical (with exception of the metal) with our Seamless Brass Tubes, and received patents therefor from the United States. We now own, we believe, the only patents under which a tube is drawn from a cylindrical casting of *Pure Copper*. Previously to our discovery of the means of casting a solid copper cylinder, what were called copper tubes were made by putting in a small quantity of alloy, but in such case the tubes would not work hot, but crack on being hammered at a red heat. Our tubes will work either hot or cold, in same manner as brazier's copper. We furnish our Seamless Copper Tubes at such prices that they are cheaper for use than the old-fashioned ones made of a sheet of copper and brazed; and all the prominent coppersmiths find it so.

We make all sizes in lengths to twenty feet. In ordering state whether wanted soft to bend either in part, or whole length.

AMERICAN TUBE WORKS, BOSTON.

LIST OF SIZES, WEIGHTS, &C.,

— OF —

LOCOMOTIVE, MARINE AND STATIONARY BOILER FLUES

AND CONDENSER TUBES,

TAPERING FROM FIRE BOX END INSIDE,

PARALLEL OUTSIDE.

Outside Diameter in Inches.	Length in Feet.	Thickness. Stubs' Wire Gauge.	WEIGHT. Brass, per Foot.	WEIGHT. Copper, per Foot.	Outside Diameter in Inches.	Length in Feet.	Thickness. Stubs' Wire Gauge.	WEIGHT. Brass, per Foot.	WEIGHT. Copper, per Foot.
$\frac{5}{8}$	12	18	$\frac{3}{8}$	$\frac{3}{8}$	$1\frac{15}{16}$	12	12&14	2	$2\frac{1}{10}$
$\frac{3}{4}$	12	17	$\frac{1}{2}$	$\frac{1}{2}$	2	15	"	$2\frac{1}{5}$	$2\frac{1}{4}$
$1\frac{3}{16}$	10	17	$\frac{9}{16}$	$\frac{9}{16}$	$2\frac{1}{8}$	13	"	$2\frac{1}{4}$	$2\frac{3}{8}$
$\frac{7}{8}$	10	17	$\frac{5}{8}$	$\frac{5}{8}$	$2\frac{1}{4}$	14	"	$2\frac{3}{8}$	$2\frac{1}{2}$
$1\frac{5}{16}$	10	16	$\frac{11}{16}$	$\frac{11}{16}$	$2\frac{3}{8}$	13	"	$2\frac{1}{2}$	$2\frac{3}{3}$
1	10	16	$\frac{3}{4}$	$\frac{3}{4}$	$2\frac{1}{2}$	13	11&13	$2\frac{3}{4}$	3
$1\frac{1}{8}$	10	16	$\frac{7}{8}$	$\frac{7}{8}$	$2\frac{5}{8}$	12	"	3	$3\frac{1}{8}$
$1\frac{1}{4}$	15	12&14	$1\frac{1}{4}$	$1\frac{1}{4}$	$2\frac{3}{4}$	12	"	$3\frac{1}{8}$	$3\frac{1}{4}$
$1\frac{3}{8}$	12	"	$1\frac{3}{8}$	$1\frac{3}{8}$	3	12	"	$3\frac{1}{3}$	$3\frac{1}{2}$
$1\frac{1}{2}$	13	"	$1\frac{1}{2}$	$1\frac{6}{10}$	$3\frac{1}{8}$	10	"	$3\frac{1}{2}$	$3\frac{5}{8}$
$1\frac{5}{8}$	12	"	$1\frac{5}{8}$	$1\frac{7}{10}$	$3\frac{1}{4}$	10	"	$3\frac{7}{8}$	$4\frac{1}{8}$
$1\frac{3}{4}$	13	"	$1\frac{3}{4}$	$1\frac{8}{10}$	$3\frac{1}{2}$	10	"	$4\frac{1}{4}$	$4\frac{3}{8}$
$1\frac{13}{16}$	13	"	$1\frac{13}{16}$	$1\frac{9}{10}$	4	10	"	5	$5\frac{1}{4}$
$1\frac{7}{8}$	12	"	$1\frac{7}{8}$	$1\frac{15}{16}$	5	10	10&12	7	$7\frac{1}{4}$
					6	10	"	8	$8\frac{1}{2}$

ANY SIZE MADE TO ORDER, IN QUANTITY.

AMERICAN TUBE WORKS, BOSTON.

IRON SIZES.

SEAMLESS BRASS TUBES

MADE TO CORRESPOND WITH IRON TUBES AND TO FIT IRON TUBE FITTINGS.

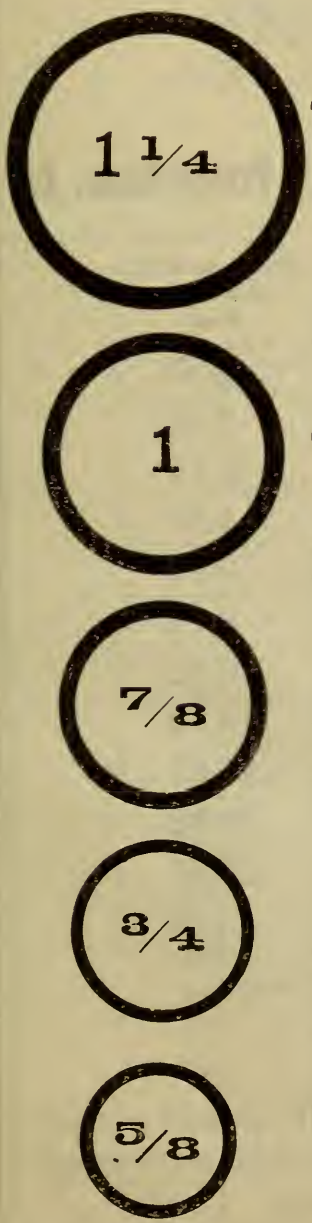
Outside Diameter. Inches.	Same as Iron Sizes. Inches.	Feet in Length.	Weight per Running Foot. Pounds.
$\frac{3}{8}$	$\frac{1}{8}$	20	$\frac{1}{4}$
$\frac{9}{16}$	$\frac{1}{4}$	20	$\frac{7}{16}$
$\frac{11}{16}$	$\frac{3}{8}$	20	$\frac{5}{8}$
$\frac{13}{16}$	$\frac{1}{2}$	20	$\frac{9}{10}$
$1\frac{1}{16}$	$\frac{3}{4}$	15	$1\frac{1}{4}$
$1\frac{5}{16}$	1	15	$1\frac{7}{10}$
$1\frac{5}{8}$	$1\frac{1}{4}$	15	$2\frac{1}{2}$
$1\frac{7}{8}$	$1\frac{1}{2}$	15	3
$2\frac{3}{8}$	2	15	$4\frac{1}{8}$
$2\frac{13}{16}$	$2\frac{1}{2}$	15	$4\frac{7}{10}$
$3\frac{1}{2}$	3	12	$8\frac{3}{10}$
4	$3\frac{1}{2}$	12	$10\frac{9}{10}$
$4\frac{1}{2}$	4	10	$12\frac{7}{10}$

SEAMLESS COPPER TUBES THE SAME SIZES ARE $\frac{1}{19}$ HEAVIER.

THREADS CUT WHEN ORDERED.

AMERICAN TUBE WORKS, BOSTON.

ACTUAL SIZES.



These tubes kept in stock, eleven feet long, with couplings on one end.

SEAMLESS DRAWN

BRASS TUBES, FITTINGS, &C.,

FOR

PLUMBING PURPOSES,

IN PLACE OF

LEAD AND OTHER PIPES.

These tubes are extensively used for Plumbing,

ESPECIALLY FOR HOT WATER,

as they do not expand permanently, like lead.

We furnish all the necessary Tools and Fittings, which are kept in stock, made to our special Standard Sizes and Gauges.

Tubes and Fittings Plain or Tinned, as ordered.

Larger tubes for Leading or Suction Pipes to order.

AMERICAN TUBE WORKS, BOSTON.

PUMP AND PISTON RODS.

SEAMLESS BRASS TUBES

DRAWN ON COLD ROLLED IRON,

FOR

Hydraulic, Force, and other Pump Plungers, Piston Rods, &c.

Outside Diameter in Inches.	DESCRIPTION.		Weight per Foot, in Pounds. About
	Diameter. IRON.	Thickness. BRASS.	
$\frac{3}{4}$	$\frac{5}{8}$	$\frac{1}{16}$	1.53
$\frac{7}{8}$	$\frac{3}{4}$	$\frac{1}{16}$	2.08
1	$1\frac{3}{16}$	$\frac{3}{32}$	2.74
$1\frac{1}{4}$	$1\frac{1}{16}$	$\frac{3}{32}$	4.23
$1\frac{1}{2}$	$1\frac{1}{4}$	$\frac{1}{8}$	6.01
$1\frac{3}{4}$	$1\frac{1}{2}$	$\frac{1}{8}$	8.16
2	$1\frac{3}{4}$	$\frac{1}{8}$	10.62
$2\frac{1}{4}$	2	$\frac{1}{8}$	13.43
$2\frac{1}{2}$	$2\frac{1}{8}$	$\frac{3}{16}$	16.67
3	$2\frac{5}{8}$	$\frac{3}{16}$	23.92
$3\frac{1}{2}$	3	$\frac{1}{4}$	33.27
4	$3\frac{1}{2}$	$\frac{1}{4}$	43.28

Any Size and Thickness made to order.

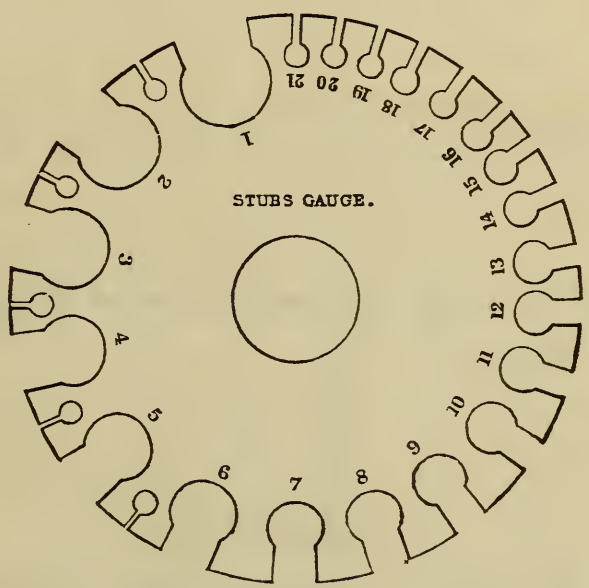
NOTE.

These Rods will be found to wear equally as well as castings, being stronger and cheaper; they require no turning, having perfectly smooth and regular surfaces.

American Tube Works, Boston.

SEAMLESS DRAWN BRASS & COPPER TUBES.

PLEASE ORDER BY THIS GAUGE.



No.	9	W. G.	=	90	lbs.	Brazier's Copper.	
"	10	"	=	80	"	"	"
"	11	"	=	70	"	"	"
"	12	"	=	65	"	"	"
"	13	"	=	55	"	"	"
"	14	"	=	45	"	"	"
"	15	"	=	40	"	"	"
"	16	"	=	36	"	"	"

AMERICAN TUBE WORKS, BOSTON.

TO FIND WEIGHT OF COPPER TUBES.

Add $\frac{1}{19}$ to the following Tables of Weights of *Brass* Tubes.

EXAMPLE.

By the Table, a 2 in. *Brass* Tube, No. 13, Wire Gauge, weighs 2.10 pounds.

Add $\frac{1}{19}$, say 0.11, and it gives 2.21 pounds as the weight of a *Copper* Tube, 2 in. diameter, 13 Wire Gauge.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS. Stubs' Wire Gauge	Fractions of Inch.	OUTSIDE DIAMETER IN INCHES. 1/4	3/8	1/2	5/8	3/4	7/8
1	19/64 F					1.55	1.99
2	9/32 F				1.12	1.53	1.94
3	1/4 F				1.07	1.45	1.82
4	15/64 F			.72	1.06	1.42	1.76
5	7/32 F			.71	1.04	1.35	1.67
6	13/64			.69	.99	1.28	1.58
7	3/16 S		.42	.68	.94	1.20	1.45
8	11/64 S		.40	.64	.87	1.11	1.35
9	9/64 F		.39	.61	.82	1.04	1.25
10	9/64 S		.38	.58	.77	.96	1.16
11	1/8 S	.18	.35	.53	.70	.87	1.05
12	7/64	.18	.33	.49	.66	.81	.97
13	3/32 F	.17	.30	.45	.58	.72	.86
14	5/64 F	.16	.28	.40	.52	.64	.76
15	5/64 S	.14	.25	.35	.46	.56	.67
16	1/16 F	.13	.23	.32	.42	.51	.61
17	1/16 S	.12	.22	.29	.38	.47	.55
18	3/64 F	.11	.18	.26	.32	.40	.47
19	3/64 S	.09	.15	.22	.28	.34	.40
20	1/32 F	.09	.13	.19	.24	.29	.34

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS.		OUTSIDE DIAMETER IN INCHES.							
Stubs' Wire Gauge	Fractions of Inch.	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8
1	19/64 F	2.42	2.85	3.29	3.72	4.16	4.59	5.03	5.46
2	9/32 F	2.36	2.77	3.17	3.58	4.00	4.41	4.82	5.24
3	1/4 F	2.20	2.58	2.96	3.33	3.71	4.08	4.46	4.83
4	15/64 F	2.10	2.45	2.79	3.14	3.49	3.83	4.17	4.52
5	7/32 F	1.99	2.31	2.62	2.95	3.26	3.58	3.91	4.22
6	13/64	1.87	2.17	2.46	2.76	3.05	3.34	3.64	3.93
7	3/16 S	1.72	1.98	2.24	2.50	2.77	3.02	3.28	3.54
8	11/64 S	1.59	1.83	2.07	2.31	2.55	2.78	3.02	3.27
9	9/64 F	1.46	1.68	1.90	2.11	2.32	2.54	2.75	2.96
10	9/64 S	1.35	1.55	1.74	1.93	2.13	2.32	2.52	2.71
11	1/8 S	1.23	1.40	1.57	1.75	1.92	2.10	2.27	2.44
12	7/64	1.12	1.28	1.44	1.60	1.76	1.92	2.07	2.23
13	3/32 F	1.00	1.13	1.27	1.41	1.55	1.68	1.82	1.96
14	5/64 F	.88	1.00	1.12	1.25	1.36	1.48	1.61	1.72
15	5/64 S	.77	.87	.98	1.08	1.19	1.29	1.40	1.50
16	1/16 F	.70	.79	.88	.98	1.07	1.17	1.26	1.36
17	1/16 S	.64	.72	.80	.88	.97	1.05	1.14	1.23
18	3/64 F	.54	.61	.67	.75	.82	.89	.96	1.04
19	3/64 S	.46	.52	.58	.65	.70	.76	.83	.88
20	1/32 F	.39	.44	.49	.54	.59	.65	.69	.74

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS. Stubs' Wire Gauge.	THICKNESS. Fractions of Inch.	OUTSIDE DIAMETER IN INCHES. 2	2 1/8	2 1/4	2 3/8	2 1/2	2 5/8	2 3/4	2 7/8
1	19/64 F	5.90	6.33	6.76	7.19	7.64	8.07	8.50	8.94
2	9/32 F	5.64	6.05	6.47	6.88	7.29	7.70	8.11	8.52
3	1/4 F	5.20	5.57	5.96	6.33	6.71	7.08	7.46	7.83
4	15/64 F	4.86	5.21	5.55	5.90	6.24	6.58	6.93	7.28
5	7/32 F	4.54	4.86	5.18	5.49	5.81	6.13	6.45	6.76
6	13/64	4.23	4.51	4.81	5.10	5.40	5.70	5.99	6.28
7	3/16 S	3.80	4.07	4.32	4.58	4.85	5.10	5.37	5.62
8	11/64 S	3.51	3.74	3.98	4.22	4.46	4.70	4.94	5.18
9	9/64 F	3.17	3.39	3.61	3.82	4.04	4.25	4.47	4.67
10	9/64 S	2.91	3.10	3.29	3.49	3.68	3.87	4.07	4.26
11	1/8 S	2.61	2.78	2.96	3.14	3.31	3.49	3.66	3.83
12	7/64	2.39	2.55	2.71	2.86	3.02	3.18	3.33	3.50
13	3/32 F	2.10	2.23	2.38	2.51	2.65	2.78	2.93	3.06
14	5/64 F	1.84	1.97	2.08	2.20	2.33	2.44	2.57	2.69
15	5/64 S	1.61	1.71	1.82	1.92	2.02	2.12	2.22	2.33
16	1/16 F	1.45	1.55	1.64	1.73	1.82	1.92	2.01	2.11
17	1/16 S	1.30	1.39	1.47	1.56	1.64	1.73	1.81	1.89
18	3/64 F	1.10	1.18	1.24	1.32	1.39	1.46	1.53	1.60
19	3/64 S	.95	1.01	1.07	1.13	1.19	1.25	1.31	1.38
20	1/32 F	.80	.85	.89	.95	1.00	1.05	1.10	1.15

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS.		OUTSIDE DIAMETER IN INCHES.							
Stubs' Wire Gauge	Fractions of Inch.	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	4 3/4
1	19/64 F	9.38	10.24	11.12	11.98	12.58	13.72	14.59	15.46
2	9/32 F	8.93	9.76	10.58	11.40	12.23	13.04	13.87	14.68
3	1/4 F	8.21	8.96	9.71	10.46	11.21	11.96	12.71	13.46
4	15/64 F	7.62	8.31	9.00	9.69	10.37	11.07	11.75	12.45
5	7/32 F	7.09	7.72	8.36	9.00	9.63	10.27	10.91	11.55
6	13/64	6.57	7.16	7.75	8.34	8.93	9.51	10.11	10.70
7	3/16 S	5.89	6.40	6.93	7.45	7.97	8.49	9.02	9.54
8	11/64 S	5.42	5.89	6.38	6.85	7.33	7.81	8.28	8.76
9	9/64 F	4.89	5.32	5.75	6.18	6.60	7.03	7.46	7.89
10	9/64 S	4.46	4.85	5.24	5.62	6.00	6.39	6.78	7.17
11	1/8 S	4.01	4.35	4.70	5.05	5.40	5.75	6.09	6.44
12	7/64	3.65	3.97	4.28	4.60	4.91	5.23	5.55	5.86
13	3/32 F	3.20	3.48	3.75	4.03	4.30	4.58	4.85	5.13
14	5/64 F	2.80	3.05	3.29	3.52	3.77	4.01	4.25	4.49
15	5/64 S	2.43	2.64	2.85	3.06	3.27	3.48	3.69	3.90
16	1/16 F	2.20	2.39	2.58	2.77	2.96	3.15	3.34	3.53
17	1/16 S	1.98	2.15	2.31	2.48	2.65	2.82	2.98	3.15
18	3/64 F	1.67	1.82	1.96	2.10	2.24	2.39	2.52	2.66
19	3/64 S	1.43	1.56	1.68	1.81	1.92	2.04	2.17	2.29
20	1/32 F	1.20	1.30	1.41	1.50	1.61	1.71	1.81	1.91

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS.		OUTSIDE DIAMETER IN INCHES.							
Stubs' Wire Gauge	Fractions of Inch.	5	5 1/4	5 1/2	5 3/4	6	6 1/4	6 1/2	6 3/4
1	19/64 F	16.33	17.20	18.07	18.93	19.81	20.67	21.55	22.41
2	9/32 F	15.51	16.34	17.16	17.98	18.80	19.62	20.46	21.29
3	1/4 F	14.21	14.96	15.71	16.46	17.21	17.97	18.72	19.47
4	15/64 F	13.14	13.82	14.52	15.20	15.89	16.59	17.27	17.97
5	7/32 F	12.19	12.83	13.46	14.10	14.74	15.37	16.01	16.65
6	13/64	11.29	11.87	12.46	13.04	13.63	14.22	14.81	15.40
7	3/16 S	10.05	10.57	11.10	11.62	12.14	12.66	13.19	13.70
8	11/64 S	9.24	9.72	10.19	10.68	11.16	11.63	12.11	12.59
9	9/64 F	8.31	8.75	9.18	9.61	10.03	10.46	10.89	11.32
10	9/64 S	7.56	7.94	8.33	8.72	9.11	9.50	9.89	10.28
11	1/8 S	6.78	7.14	7.48	7.83	8.18	8.52	8.87	9.22
12	7/64	6.18	6.50	6.81	7.13	7.44	7.76	8.08	8.39
13	3/32 F	5.41	5.68	5.96	6.23	6.51	6.78	7.06	7.33
14	5/64 F	4.73	4.97	5.22	5.45	5.69	5.94	6.18	6.42
15	5/64 S	4.10	4.31	4.52	4.73	4.94	5.14	5.35	5.56
16	1/16 F	3.72	3.90	4.09	4.28	4.47	4.66	4.85	5.04
17	1/16 S	3.32	3.49	3.66	3.82	3.99	4.16	4.32	4.49
18	3/64 F	2.80	2.95	3.09	3.23	3.37	3.52	3.66	3.80
19	3/64 S	2.41	2.53	2.65	2.77	2.90	3.02	3.14	3.27
20	1/32 F	2.01	2.12	2.22	2.32	2.42	2.53	2.62	2.73

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS.		OUTSIDE DIAMETER IN INCHES.							
Stubs' Wire Gauge	Fractions of Inch.	7	7 1/4	7 1/2	7 3/4	8	8 1/4	8 1/2	8 3/4
1	19/64 F	23.29	24.15	25.02	25.89	26.76	27.63	28.50	29.36
2	9/32 F	22.09	22.92	23.75	24.57	25.38	26.21	27.03	27.85
3	1/4 F	20.22	20.97	21.72	22.47	23.21	23.97	24.72	25.47
4	15/64 F	18.65	19.34	20.03	20.72	21.41	22.10	22.79	23.48
5	7/32 F	17.28	17.92	18.56	19.20	19.84	20.47	21.11	21.75
6	13/64	15.99	16.58	17.17	17.74	18.33	18.92	19.51	20.10
7	3/16 S	14.22	14.74	15.27	15.79	16.31	16.83	17.35	17.87
8	11/64 S	13.06	13.55	14.02	14.50	14.98	15.46	15.93	16.42
9	9/64 F	11.74	12.17	12.60	13.03	13.46	13.89	14.32	14.74
10	9/64 S	10.66	11.05	11.44	11.83	12.22	12.61	12.99	13.38
11	1/8 S	9.57	9.92	10.26	10.61	10.95	11.31	11.65	12.00
12	7/64	8.70	9.03	9.34	9.65	9.97	10.29	10.60	10.92
13	3/32 F	7.61	7.89	8.16	8.44	8.71	8.99	9.26	9.54
14	5/64 F	6.66	6.90	7.13	7.38	7.62	7.86	8.09	8.34
15	5/64 S	5.77	5.98	6.19	6.39	6.60	6.81	7.02	7.23
16	1/16 F	5.22	5.41	5.60	5.79	5.98	6.17	6.35	6.54
17	1/16 S	4.66	4.84	5.00	5.17	5.34	5.51	5.67	5.84
18	3/64 F	3.94	4.09	4.23	4.37	4.50	4.65	4.79	4.93
19	3/64 S	3.38	3.51	3.63	3.75	3.88	4.00	4.11	4.24
20	1/32 F	2.83	2.94	3.03	3.14	3.24	3.33	3.44	3.54

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS.		OUTSIDE DIAMETER IN INCHES.							
Stubs' Wire Gauge.	Fractions of Inch.	9	9 1/4	9 1/2	9 3/4	10	10 1/4	10 1/2	10 3/4
1	19/64 F	30.24	31.10	31.98	32.84	33.72	34.58	35.45	36.32
2	9/32 F	28.67	29.50	30.32	31.14	31.97	32.79	33.61	34.44
3	1/4 F	26.22	26.97	27.72	28.47	29.22	29.97	30.72	31.47
4	15/64 F	24.17	24.86	25.55	26.24	26.92	27.62	28.30	28.99
5	7/32 F	22.38	23.02	23.65	24.29	24.93	25.57	26.21	26.85
6	13/64	20.69	21.28	21.86	22.45	23.04	23.63	24.22	24.80
7	3/16 S	18.39	18.92	19.44	19.96	20.47	21.00	21.52	22.04
8	11/64 S	16.89	17.37	17.85	18.33	18.80	19.29	19.76	20.24
9	9/64 F	15.17	15.60	16.03	16.45	16.88	17.31	17.75	18.17
10	9/64 S	13.77	14.16	14.55	14.93	15.31	15.70	16.09	16.48
11	1/8 S	12.35	12.69	13.04	13.39	13.74	14.09	14.43	14.78
12	7/64	11.23	11.55	11.87	12.18	12.49	12.82	13.13	13.44
13	3/32 F	9.81	10.09	10.36	10.64	10.92	11.19	11.47	11.74
14	5/64 F	8.58	8.83	9.06	9.30	9.55	9.79	10.02	10.26
15	5/64 S	7.44	7.65	7.85	8.06	8.27	8.47	8.68	8.89
16	1/16 F	6.73	6.92	7.11	7.30	7.48	7.67	7.86	8.05
17	1/16 S	6.01	6.18	6.35	6.52	6.68	6.85	7.02	7.19
18	3/64 F	5.07	5.22	5.36	5.50	5.64	5.79	5.93	6.07
19	3/64 S	4.36	4.48	4.61	4.73	4.86	4.98	5.10	5.23
20	1/32 F	3.64	3.74	3.85	3.94	4.05	4.15	4.25	4.35

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

WEIGHT OF A LINEAL FOOT OF SEAMLESS DRAWN BRASS TUBE.

THICKNESS. Stubs' Wire Gauge.	Fractions of Inch.	OUTSIDE DIAMETER IN INCHES. 11	11 1/4	11 1/2	11 3/4		12		
1	19/64 F	37.19	38.06	38.93	39.80		40.67		
2	9/32 F	35.26	36.08	36.90	37.73		38.55		
3	1/4 F	32.22	32.98	33.73	34.48		35.22		
4	15/64 F	29.69	30.37	31.07	31.75		32.44		
5	7/32 F	27.48	28.12	28.76	29.39		30.03		
6	13/64	25.39	25.98	26.57	27.16		27.75		
7	3/16 S	22.56	23.09	23.60	24.12		24.64		
8	11/64 S	20.72	21.20	21.67	22.15		22.63		
9	9/64 F	18.60	19.03	19.46	19.88		20.31		
10	9/64 S	16.87	17.26	17.65	18.03		18.42		
11	1/8 S	15.12	15.49	15.83	16.17		16.52		
12	7/64	13.76	14.08	14.39	14.71		15.02		
13	3/32 F	12.02	12.29	12.57	12.84		13.12		
14	5/64 F	10.51	10.75	10.99	11.23		11.47		
15	5/64 S	9.10	9.31	9.52	9.72		9.93		
16	1/16 E	8.24	8.43	8.61	8.80		8.99		
17	1/16 S	7.35	7.52	7.70	7.87		8.03		
18	3/64 F	6.21	6.36	6.50	6.64		6.77		
19	3/64 S	5.34	5.46	5.59	5.71		5.82		
20	1/32 F	4.46	4.56	4.66	4.76		4.85		

F means Full. S means Scant.

AMERICAN TUBE WORKS, BOSTON.

TO FIND WEIGHT BY INSIDE DIAMETER OF SEAMLESS DRAWN BRASS TUBES.

Stubs' Wire Gauge.	Decimals. Pounds.
1	2.21
2	1.97
3	1.66
4	1.38
5	1.18
6	1.01
7	0.78
8	0.67
9	0.53
10	0.43
11	0.35
12	0.29
13	0.22
14	0.17
15	0.13
16	0.11
17	0.08
18	0.06
19	0.05
20	0.03

The numbers against the *Wire Gauge numbers* if added to weights given for *outside* diameters, closely approximate weights of same measure *inside* diameter.

EXAMPLE.

By the Table, a 2 in. Tube, No. 13 Wire Gauge, *outside* diameter, weighs 2.10 lbs.

From column of Decimals on the left, against No. 13, Wire Gauge, find 0.22, which, added to 2.10, gives 2.32 as weight by *inside* diameter.

AMERICAN TUBE WORKS, BOSTON.

THE WEIGHTS GIVEN IN THE WITHIN PAGES ARE THEORETICALLY CORRECT; BUT IN PRACTICE A DEVIATION FROM THE THEORETICAL WEIGHT MUST BE EXPECTED.

AMERICAN TUBE WORKS

BOSTON

Sole Manufacturers in America of

GREEN'S AND ALSTON'S

Patent Seamless Drawn Brass Tubes,

AND

ADAMS' PATENT

Seamless Drawn Copper Tubes,

FOR

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Heater Tubes.	*Hand Rail.*	*Feed Pipes.*
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